

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. through 17. (canceled)

18. (currently amended) A method for constructing multiple alternative execution plans for a single database query, comprising:

constructing one of the execution plans by—

selecting one of a plurality of operators from a root group of a data structure having a plurality of groups of alternative operators, certain of the operators having pointers to one or more different ones of the groups,

selecting one of a plurality of the operators in at least one of the different groups,

repeating the preceding act step until reaching those of the operators not having pointers to another one of the groups,

repeating the above acts steps, selecting at least one different operator for each of the constructed plans.

19. (original) The method of claim 18 where the operators are selected by accessing a directory containing their locations in the data structure.

20. (original) The method of claim 19 where the directory includes a rank for each operator representing a number of alternative plans associated with that operator.

21. (currently amended) The method of claim 20 further comprising the act of including adjusting the rank of one of the selected operators after it has been selected.

22. (original) The method of claim 19 where the directory includes a rank for each group representing a number of alternative plans associated with that group.

23. (currently amended) The method of claim 18 further comprising the act of receiving a specification containing at least one global rank designation, and where the selecting acts steps-select their respective operators in response to the global rank designation.

24. (original) The method of claim 23 where the respective operators are selected such that the global rank designation uniquely identifies a single one of the alternative execution plans.

25. (original) The method of claim 23 where the specification contains a plurality of global rank designations.

26. (currently amended) The method of claim 25 further comprising the act of deriving the plurality of global rank designations from the specification.

27. (original) The method of claim 18 where the operators and pointers form a tree structure.

28. (original) The method of claim 27 where each operator is selected in each repetition in a manner such that all of the possible alternative plans has approximately the same probability of being unranked.

29. (original) The method of claim 27 where the probability of selecting each operator in each group is related to the number of operators in the subtree of the each operator.

30. (currently amended) A medium bearing representations of instructions and data for causing a suitably programmed computer to perform the method comprising the acts of:

constructing one of the execution plans by -

selecting one of a plurality of operators from a root group of a data structure having a plurality of groups of alternative operators, certain of the operators having pointers to one or more different ones of the groups,

selecting one of a plurality of the operators in at least one of the different groups,

repeating the preceding act step until reaching those of the operators not having pointers to another one of the groups,

repeating the above acts steps, selecting at least one different operator for each of the constructed plans.

31. (original) The method of claim 30 where the medium is a storage medium.

32. (original) The method of claim 30 where the medium is a signal transmitted on a network of computers.

33. (original) A system for validating multiple alternative execution plans for a single database query, comprising:

a search engine responsive to the query for constructing a data structure containing a plurality of groups each including a number of alternative operators, at least some of the operators having pointers to one or more different ones of the groups;

a ranking module for ranking the operators in the groups and for unranking them so as to construct a plurality of different execution plans for the query;

a validation module for validating the execution plans from the ranking module.

34. (original) The system of claim 33 where the data structure is a table.

35. (original) The system of claim 33 further including a specification for specifying a number of different plans to be constructed.

36. (original) The system of claim 33 further including a directory containing locations of the groups and operators within the data structure containing the groups.

37. (original) A directory for a data structure having a plurality of groups of alternative operators for carrying out a database query, at least some of the operators having pointers to one or more different ones of the groups, the directory including indicia representing locations of the operators within the data structure; rank data for each operator representing a number of alternative plans associated with that operator.

38. (currently amended) The system directory of claim 36 where the directory includes rank data for each group representing a number of alternative plans associated with that group.